

In the claims:

Please amend claims 1, 3-5, 9, 11, 14-21, 29-35, 44, 45, and 69-74 as follows. A complete listing of all claims is compliance with the *Pre-OG* notice, "Amendments in a Revised Format Now Permitted" is provided in the "Complete Listing of Claims" below.

1. (Currently Amended) A composition comprising a ~~substantially~~ purified thermostable Gux1 peptide, said Gux1 peptide comprising a catalytic domain classified in family glycoside hydrolase 48 (GH48), a carbohydrate binding domain (CBD) type III, and a carbohydrate binding domain (CBD) type II.
2. (Original) The composition of claim 1 wherein the Gux1 peptide is further defined as comprising a linker and a signal peptide.
3. (Currently Amended) The composition of claim 1 ~~or 2~~ wherein the GH48 catalytic domain of the Gux1 peptide is further defined as having a length of about 637 to about 643 amino acids.
4. (Currently Amended) The composition of claim 1, ~~2, or 3~~ wherein the carbohydrate binding domain (CBD) type III of the Gux1 peptide is further defined as having a length of about 150 to about 156 amino acids.
5. (Currently Amended) The composition of claim 1, ~~2, 3, or 4~~ wherein the carbohydrate binding domain (CBD) type II of the Gux1 peptide is further defined as having a length of about 95 amino acids to about 105 amino acids in length.
6. (Original) The composition of claim 3 wherein the GH48 catalytic domain is further defined as the sequence of SEQ ID NO: 5.

7. (Original) The composition of claim 4 wherein the carbohydrate binding domain (CBD) type III is further defined as the sequence of SEQ ID NO: 4.
8. (Original) The composition of claim 6 wherein the carbohydrate binding domain (CBD) type II is further defined as the sequence of SEQ ID NO: 7.
9. (Currently Amended) The composition of claim 1 further defined as comprising, in combination, a sequence of SEQ ID NO: 4, SEQ ID NO: 5, and SEQ ID NO: 7.
10. (Original) A thermal tolerant Gux1 peptide having a sequence of SEQ ID NO: 1.
11. (Currently Amended) The Gux1 peptide of claim 10 further defined as having an amino acid sequence encoded by SEQ ID NO: 2.
12. (Cancelled)
13. (Cancelled)
14. (Currently Amended) The composition of claim 1 wherein the Gux1 is further defined as comprising an amino acid sequence ~~encoded by a nucleic acid sequence~~ having at least 90% sequence identity to ~~the nucleic acid sequence encoding an amino acid sequence of~~ SEQ ID NO: 5.
15. (Currently Amended) The composition of claim 1 wherein the Gux1 is further defined as comprising an amino acid sequence ~~encoded by a nucleic acid sequence~~ having at least 80% sequence identity to ~~the nucleic acid sequence encoding an amino acid sequence of~~ SEQ ID NO: 5.
16. (Currently Amended) The composition of claim 1 wherein the Gux1 is further defined as comprising an amino acid sequence ~~encoded by a nucleic acid sequence~~

having at least 70% sequence identity to ~~the nucleic acid sequence encoding an amino acid sequence of~~ SEQ ID NO: 5.

17. (Currently Amended) The composition of claim 1 wherein the Gux1 is further defined as comprising an amino acid sequence ~~encoded by a nucleic acid sequence~~ having at least 90% sequence identity to ~~the nucleic acid sequence encoding the amino acid sequence of~~ SEQ ID NO: 7.

18. (Currently Amended) The composition of claim 1 wherein the Gux1 is further defined as comprising an amino acid sequence ~~encoded by a nucleic acid sequence~~ having at least 90% sequence identity to ~~the nucleic acid sequence encoding the amino acid sequence of~~ SEQ ID NO: 4.

19. (Currently Amended) The composition of claim 1 wherein the Gux1 is further defined as comprising an amino acid sequence ~~encoded by a nucleic acid sequence~~ having at least 90% sequence identity to ~~the nucleic acid sequence encoding the amino acid sequence of~~ SEQ ID NO: 6.

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20. (Currently Amended) The composition of claim 1 wherein the Gux1 is further defined as comprising an amino acid sequence ~~encoded by a nucleic acid sequence~~ having at least 90% sequence identity to ~~the nucleic acid sequence encoding the amino acid sequence of~~ SEQ ID NO: 1.

21. (Currently Amended) The composition of claim 1 wherein the Gux1 is further defined as comprising an amino acid sequence encoded by a nucleic acid sequence having that has at least 90% identity to the nucleic acid sequence of SEQ ID NO: 2.

22. (Original) The composition of claim 1 wherein the Gux1 is further defined as comprising a nucleic acid sequence encoding a heterologous protein in frame with the Gux1 peptide of claim 1.

23. (Original) The composition of claim 22 wherein the heterologous protein in frame with the Gux1 peptide of claim 1 is further defined as a peptide tag.
24. (Previously Amended) The composition of claim 23 wherein the peptide tag is 6-His (SEQ ID NO: 8), thioredoxin, hemagglutinin, GST, or OmpA signal sequence tag.
25. (Previously Amended) The composition of claim 22 wherein the heterologous protein is a substrate targeting moiety.
26. (Cancelled)
27. (Cancelled)
28. (Previously Amended) An isolated polypeptide molecule comprising:
a) a sequence of SEQ ID NO: 4;
b) a sequence of SEQ ID NO: 5;
c) a sequence of SEQ ID NO: 6;
d) a sequence of SEQ ID NO: 7;
e) a sequence of SEQ ID NO: 1; or
f) an amino acid sequence having at least 70% sequence identity with the amino acid sequence of a), b), c), d), or e).
29. (Currently Amended) The polypeptide molecule of claim 28, having at least 90% sequence identity with the amino acid sequence of a), b), c), d), or e).
30. (Currently Amended) A fusion protein comprising the polypeptide of claim 28 and a heterologous peptide.
31. (Currently Amended) The fusion protein of claim 30, wherein the heterologous peptide is a substrate targeting moiety.

32. (Currently Amended) The fusion protein of claim 3029, wherein the heterologous peptide is a peptide tag.
33. (Currently Amended) The fusion protein of claim 3231, wherein the peptide tag is 6-His (SEQ ID NO: 8), thioredoxin, hemagglutinin, GST, or OmpA signal sequence tag.
34. (Currently Amended) The fusion protein of claim 3029, wherein the heterologous peptide is an agent that promotes polypeptide oligomerization.
35. (Currently Amended) The fusion protein of claim 3429, wherein the agent is a leucine zipper.
36. (Cancelled)
37. (Cancelled)
38. (Cancelled)
39. (Cancelled)
40. (Cancelled)
41. (Cancelled)
42. (Cancelled)
43. (Cancelled)
44. (Currently Amended) A composition comprising the polypeptide molecule of claim 2928 and a carrier.

45. (Currently Amended) A composition comprising the polypeptide molecule of claim 3029 and a carrier.

46. (Cancelled)

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66. (Cancelled)
67. (Cancelled)
68. (Cancelled)
- D¹ 69. (Previously Added) The composition of claim 1 further comprising a carrier.
70. (Previously Added) The composition of claim 1 wherein the substantially purified thermostable Gux I peptide is further defined as comprising a heterologous peptide or protein.
71. (Currently Amended) The composition of claim 70~~69~~ wherein the heterologous peptide or protein comprises an immunoglobulin.
72. (Currently Amended) The composition of claim 70~~69~~ wherein the ~~heterologues~~ heterologous peptide comprises a histidine tag.

73. (Currently Amended) The composition of claim 7069 wherein the heterologous peptide comprises a leucine zipper.

D 74. (Currently Amended) The composition of claim 7069 wherein the heterologous peptide comprises a fusion protein.
